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ABSTRACT

This study attempted to determine if significant and lasting cognitive gains could be achieved by focusing preschool efforts upon children younger than those now being serviced by traditional programs--children under three years of age. Thirty-six disadvantaged children, 19-28 months of age, were randomly assigned to two groups: a Home Group receiving 70 minutes of tutoring in the home weekly, and a Center Group attending a four-hour per day centrally located cognitive enrichment program. After 125 program days, analyses of covariance of posttest scores (taking pretest scores as covariates) on the Slosson Intelligence Test, the Peabody Picture Vocabulary Test, and the Vineland Social Maturity Scale (VSMS) revealed significant differences favoring the Center Group on the first two measures. Nonsignificance on the VSMS appeared to be artifactual. The results demonstrate the feasibility and merits of compensatory education with disadvantaged infants in a school setting. [Not available in hard copy due to marginal legibility of original document.] (Author/JM)

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TOWARD AN EFFECTIVE EDUCATIONAL PROGRAM FOR DISADVANTAGED INFANTS

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ABSTRACT

Thirty-six disadvantaged children, 19-28 months of age, were randomly assigned to two groups: a Home Group receiving 70 minutes of tutoring in the home weekly; and a Center Group attending a 4 hour per day centrally located cognitive enrichment program.

After 125 program days, analyses of covariance of post-test scores (pre-test scores as covariates) on the Slosson Intelligence Test, the Peabody Picture Vocabulary Test, and the Vineland Social Maturity Scale revealed significant differences favoring the Center Group on the first two measures. Non-significance on the Vineland appeared to be artifactual.

The results demonstrate the feasibility and merits of compensatory education with disadvantaged infants in a school setting.

Toward An Effective Educational Program for Disadvantaged Infants

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That disadvantaged children do not do well in our schools has become a well-established fact. Typically entering school with considerably lower language and conceptual abilities relative to their advantaged counterparts, they maintain this disadvantage and often increase it over time, resulting in what has sometimes been referred to as a "cumulative deficit." The consequences of this deficit generally lead to educational failure and a disheartening waste of human potential. Comprehensive efforts at overcoming the early disabilities of these children must begin at the preschool level.

Davis (1964) reports that by the time they are two years of age, the children from lower socioeconomic groups are already inferior in verbal skills to those from the middle class, and moreover, after the primary grades the superiority of the middle class child in academic areas increases faster than that of the lower class child.

Bruner (1960, 1964) argues that exposure to normally enriched environments makes the development of cognitive strategies possible by providing intervening opportunities for trial and error learning.

That there is impairment under a deprived environment is fairly evident. Disadvantaged children have a meager environmental foundation upon which to develop such cognitive skills and are generally unprepared to cope with the formal intellectual and learning demands of the school.

The thesis that certain environmental conditi ons have a retarding effect upon psychological processes, including intellectual development has been borne out in experiments on both animals and human beings (e.g. Hebb, 1949, Hunt, 1961). That improvement of environmental conditions can have a significantly positive impact upon the intellectual development of such children is also supported by a number of experimental studies (e.g. Bereiter & Engelmann, 1966, Clarke & Clarke, 1959; Gray & Klaus, 1965; Skeels, Updegraff, Wellman, & Williams, 1968; Skodak & Skeels, 1949; Spicker, Hodges & McCandless, 1966; Wellman, 1940).

Although experimental evidence exists in support of the hypothesis that appropriate supplementary experiences at an early age can result in considerably rapid and significant increases in behavioral development among children from impoverished environmental conditions, by far the majority of such programs have met with only marginal success due to a variety of reasons principal of which seem to be: failure to concentrate on the language development of these children, and starting too late. The question remains, however as to how early in the disadvantaged child's life intervention should take place in order to maximize the effectiveness of such a program.

We know that children learn a great deal during the early years of their life, and from Piaget's work, in particular, it is apparent that young children have the ability to deal with many kinds of problems on the intuitive level and solve them without being able to verbalize them. What is needed now is a set of teaching techniques which allow children at the early stages of their development to work on certain problems and undergo effective learning experiences without necessarily having to provide verbal explanations or exchanges. This is an especially important consideration in the early education of culturally disadvantaged groups, where verbal facility often lags considerably behind intellectual potential. Thus, children are able to learn to conceptualize at a very early age and possible too early an age to be significantly aided or in most respects affected in the long run by our traditional preschool and kindergarten programs. Perhaps significant and lasting cognitive gains could be achieved by focusing our preschool efforts upon children younger than those now being serviced by traditional programs - children under three years of age. This was the question to which the present study was directed.

Method

The subjects were 36 disadvantaged negro children (14 boys and 22 girls) ranging in age from 19 to 28 months with a mean of 24 months at the start of the investigation. These children were randomly assigned, proportionately by sex, to either of two groups in such a manner that

the Center Group numbered seventeen and the Home Group nineteen.

The experimental treatment to which the Center children were exposed consisted of an academic preschool enrichment program, conducted each weekday morning for 4 hours while the Comparison Group (Home Group) received home visitations in which more restricted enrichment activities were undertaken for periods of 1.2 hours per week. The Center Program was an attempt at structuring the child's surroundings in such a way as to provide a type of programmed sequence of environmental interactions, each supplying a prerequisite experience for the next in a hierarchical fashion, and in this way causing the child's culture-relevant learning encounters to be brought to occurrence with greater frequency and contiguity, and the course of his acculturation to be made more efficient.

The emphasis was on providing an environment of massive stimulation through all sensory channels in a programmed and integrated fashion. The aim was to develop acuteness of perception and discrimination within each of the senses and to then relate perceptions via one of the senses with perceptions via other senses in an integrative manner. Thus, the child was not only required to distinguish, for example, between two objects such as a bell and a whistle by the way they appear visually, but by the way they sound auditorily. This was later integrated with the way they feel tactually and so on. This emphasis was basic to the Center Program.

A teacher and eight student assistants were available for specifying the learning tasks for each of the children and for

organizing their experiences, providing feedback on performance, and encouraging abstraction of performance into language. At some times the group of children were exposed to activities as a while, while at other times exposure was specialized and on an individual basis, with the balance of the group interacting with segments of the structured learning space environment in a free-play situation.

As a measure of the effectiveness of the program with respect to cognitive development, the Slosson Intelligence Test was administered on a pre- and post-test basis. All subjects were additionally tested on the Peabody Picture Vocabulary Test and the Vineland Social Maturity Scale.

Results

The program was conducted over a total period of about seven and one half months, although the program was in session only 125 days during this period of time.

Scores on the Slosson were recorded in terms of M.A., and on the Peabody and Vineland in raw-score form. Pretest measures for the Center Group were found to be 25.8, 7.5 and 35.9, respectively, while for the Comparison Group scores of 22.6, 7.4, and 37.1 were obtained. On the post-test, Center children registered scores of 30.7, 17.4, and 48.3 as compared with 33.0, 11.9, and 44.6, respectively, for the Comparison Group.

Analyses of covariance were performed on post-test scores for the Slosson Intelligence Test, The Peabody Picture Vocabulary Test,

and The Vineland Social Maturity Scale, using the pre-test measures as the respective covariates. On the Slosson, differences between Experimental and Comparison programs were found to be significant ($p < .05$) in favor of the Experimentals (for those who insist on talking in terms of intelligence, this represents a difference of 23 IQ points). Scores on the Peabody for both groups also indicated statistically significant differences ($p < .01$) favoring the Experimentals. Differences between the two groups on the Vineland, however, although directionally yielding relative gains favoring the Experimentals, failed to reach statistical significance. It is interesting to note that for the Experimental group as well as the combined groups, age of subject was not a significant related factor in gains on either the Slosson or the Peabody.

Discussion

The results indicate rather considerable gains for both groups in the study on all three of the evaluation instruments: the Slosson Intelligence Test; the Peabody Picture Vocabulary Test; the Vineland Social Maturity Scale. On both the Slosson, measuring general cognitive development, and the Peabody, measuring development in hearing vocabulary, the Experimentals were shown to gain significantly more than the Comparison children. On the Vineland, however, no significant differences in gains in social maturity were found between the two groups.

This latter finding of non-significance in the area of social maturity was deemed suspect due to evidence indicating it to be more of an

artifact of the testing situation.

The relative advances in cognitive development and hearing vocabulary, while as yet inconclusive in the social area, not only demonstrate the effectiveness of a particular program in a particular center, but also the potential effectiveness which preschool programs in general can achieve with disadvantaged children as young as 19-28 months of age. In addition, the finding of a non-significant correlation between gain scores on any of the test measures and the age of subject variable, suggests that for the type of program utilized in the present study a limit has not as yet been reached here as to how young the youngest can be and still demonstrate gains comparable to his older counterparts.

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